FACT SHEET

PCBs

Polychlorinated Biphenyls

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WHAT ARE PCBs?

PCBs stand for polychlorinated biphenyls and represent a group of 209 different compounds. PCBs are crystalline in nature, very stable and highly persistent in the environment. As a non-flammable, non-explosive material, it makes an excellent insulating material. Two accepted ways to destroy PCBs are through incineration and chemical detoxification.

HOW WERE PCBs USED?

Between 1929 and 1977, approximatey 1.25 billion pounds of PCBs were produced in the United States under different trade names such as Aroclor, Therminol FR, Askarel, Clorinol, Inerteen and others.

PCBs were used in an "open" fashion in a wide variety of manufactured products from 1929 until 1971. The "open use" product included plasticizers in such products as varnishes, adhesives, paints, carbonless copy paper and inks, fire retardants, pesticide extenders, diesel and jet fuels, to name a few. Over time, these products have been released into the environment, and background levels of PCB's are found in the environment, including oceans and soils. As a result, animals and humans may carry detectable levels of PCBs in their bodies.

LAWS REGULATING PCBs

From 1971 until after the Toxic Substances Control Act (TSCA) of 1976, PCBs were used in "closed loop" systems. These systems included heat transfer fluids, hydraulic fluids, small capacitors, lubricants in gas turbines and diffusion pump oils. The TSCA required EPA to take certain actions:

1977 - prescribe methods for PCB disposal and require labeling of certain PCB-containing materials with warnings and handling instructions.
1979 - the production of PCBs was banned in the U.S. and by July, 1979, distribution of PCBs in commerce was prohibited.

Additional regulations since 1979 have dealt with added restrictions on the use of certain types of transformers and capacitors, on the commercial storage and transportation of PCBs and on spill cleanup and reporting.

PCBs IN THE ENVIRONMENT

In the air -- PCBs do not readily evaporate. Since PCBs can attach to soil particles they may become airborne as a result of blowing dust. PCBs have been found in arctic lakes and uninhabited wilderness areas.

In the water and sediments -- PCBs do not dissolve in water to any appreciable extent. In surface water they sink to the bottom and attach to sediments. Sources of PCBs in water are industrial effluents and wastes.

In the soil -- The mobility of PCBs in soil is limited. PCBs can migrate through soil erosion.

HUMAN EXPOSURE AND HEALTH

Humans may be exposed to closed-system PCBs through:

occupation (workers who repair or handle transformers or capacitors still containing PCBs);
accidents (for example, leaks or fires in transformers); or
exposure to PCBs in the environment around sites where old transformers and capacitors have been dumped or stored.

PCBs are lipid-soluble and are therefore stored in fat. PCB levels in humans have not been studied extensively in the general population, but several major health effects have been reported at different PCB levels, such as chloracne, liver dysfunctions and certain types of cancer.

DISPOSAL OF PCBs

Materials contaminated with PCBs must be disposed of according to strict state and federal regulations. The method of disposal depends on the nature of the material contaminated and the level of concentration.

There are a limited number of federally permitted commercial sites that dispose of PCBs.